



CLEVELAND-CLIFFS INC.
Cleveland-Cliffs Minorca Mine Inc.
5950 Old Highway 53 N., Virginia, MN 55792
P 218.749.5910 clevelandcliffs.com

July 27, 2022

Regional Administrator
Air and Radiation Division
U.S. Environmental Protection Agency, Region 5 (A-18J)
77 West Jackson Boulevard
Chicago, IL 60604

**Re: Cleveland-Cliffs Minorca Mine Inc.
Semiannual Compliance Report for the 1st Half of 2022
Federal Implementation Plan for Regional Haze (FIP)**

On behalf of Cleveland-Cliffs Minorca Mine (Minorca), I am submitting the enclosed Semiannual Compliance Report for the Excess Emissions and Monitoring System Performance Reports for the 1st Half of 2022 as required by 40 CFR 52.1235(e)(5-6).

It should be noted that while the continuous NO_x and SO₂ emissions monitoring requirements of the FIP are in effect, Minorca is not yet subject to the NO_x emission limitation specified by 40 CFR 52.1235(b)(1)(v). 40 CFR 52.1235(b)(1)(v)(A) specifies that the NO_x limitation will become enforceable "...55 months after May 12, 2016 and only after EPA's confirmation or modification of the emission limit...", which has not yet occurred.

Minorca has also submitted the quarterly CEMS reports required by 40 CFR 52.1235(e)(7) on July 27, 2022. Some information specified within this report may refer you to this quarterly CEMS report and the previous CEMS report for the first quarter of 2021 submitted April 18, 2022 for additional details.

Minorca submitted a revision of the 38.16 lb SO₂/hr on a 30-day rolling average limit in accordance with 40 CFR 52.1235(b)(2)(v) on April 6, 2018. That section of the FIP provides that Minorca "may calculate a revised SO₂ limit based on one year of hourly CEMS emissions data reported in lbs SO₂/hr and submit such limit, calculations, and CEMS data to EPA." This provision to modify the SO₂ limit exists because EPA recognized that the initial SO₂ limit was based on "limited stack test data" (78 Fed. Reg. 8718) and did not reflect the variability of Minorca's operations. The revised emission limit calculation methodology follows the provisions of 40 CFR 52.1235(b)(2)(v) and results in an updated emission limit of 58.64 lbs SO₂/hr based on a 30-day rolling average (prior to adjusting to account for operating levels of the Minorca furnace which were less than capacity during the data collection period). Adjusting to reflect the emissions associated with operation of the furnace at capacity using the above equation results in a limit of 73.79 lbs SO₂/hr based on a 30-day rolling average. The revised limit became effective on the April 6, 2018 date of submittal of the limit revision package.

Sincerely,

Sincerely,



Connor McCue

cc: Jaime Johnson (Cleveland-Cliffs Minorca Mine Inc.)
Scott Gischia (Cleveland-Cliffs Inc.)

40 CFR 52 Subpart Y
Approval and Promulgation of Implementation Plans - Minnesota

52.1235 – Regional Haze

Semi-Annual Report (52.1235(e)(5)-(6))


Company Name (52.1235(e)(6)(i)): Cleveland-Cliffs Minorca Mine Inc.		Beginning date of reporting period (52.1235(e)(6)(iii)): 1/1/2022
Company Address: 5950 Old Highway 53 North P.O. Box 1 Virginia, MN 55792		Ending date of reporting period (52.1235(e)(6)(iii)): 06/30/2022
Person to Contact Regarding Submittal: Jaime Johnson	Mailing Address: Same as above	Telephone No: 218-305-3337
Identification of the process unit, control devices, and CEMS covered by the compliance report. (52.1235(e)(6)(iv)): Process Unit: <ul style="list-style-type: none">• Indurating Furnace (EU 026) Control Devices: <ul style="list-style-type: none">• Venturi Scrubbers (CE 014, CE 015, CE 016 and CE 017) CEMS: <ul style="list-style-type: none">• SO₂ CEMS (EU026-SO₂)• NO_x CEMS (EU026-NO_x)		
Attachments		
A	Records of Startups and Shutdowns (52.1235(e)(6)(v))	
B	Records of Malfunctions (52.1235(e)(6)(v))	
C	Deviations (52.1235(e)(6)(vi)) <ul style="list-style-type: none">• Emissions in Excess of Applicable Emission Standards• Deviations of Requirement to Continuously Operate Emissions Control Device• Deviations of Requirement to Continuously Operate CEMS• Deviations for Failure to Maintain Records or Submit Reports	
Certification		
Name, Title and Signature of Responsible Official Who is Certifying the Truth, Accuracy and Completeness of the content of the Report (52.1235(e)(6)(ii)): I certify, based on information and belief formed after reasonable inquiry, that the statements and information in this document are true, accurate, and complete.		
Signature: 		Date of report: 7-27-22
Printed Name: Conor McCue		Title: Operations Manager

Table A
Records of Startups and Shutdowns (52.1235(e)(6)(v))

ID#	Description	Startup or Shutdown	Start	End	Actions Taken to Minimize or Eliminate Emissions	Consistent with SSM Plan?
EU 026	Indurating Machine	Shutdown	1/3/2022 18:11	1/3/2022 19:00	Scrubbers were operated in compliance with parametric limits until pellet feed to the furnace stopped and natural gas fuel combustion ceased.	Y
		Startup	1/5/2022 16:17	1/6/2022 18:45	Scrubbers were started up consistent with the SSM Plan. Scrubbers were never fully shut down during the furnace shutdown. The furnace was relit, and the pellet bed started up following a warm-up period for the furnace.	Y
		Shutdown	1/7/2022 22:40	1/7/2022 22:46	Scrubbers were operated in compliance with parametric limits until pellet feed to the furnace stopped and natural gas fuel combustion ceased.	Y
		Startup	1/9/2022 6:26	1/10/2022 4:01	Scrubbers were started up consistent with the SSM Plan. Scrubbers were never fully shut down during the furnace shutdown. The furnace was relit, and the pellet bed started up following a warm-up period for the furnace.	Y
		Shutdown	1/10/2022 10:01	1/10/2022 10:32	Scrubbers were operated in compliance with parametric limits until pellet feed to the furnace stopped and natural gas fuel combustion ceased.	Y
		Startup	1/10/2022 13:04	1/10/2022 20:59	Scrubbers were started up consistent with the SSM Plan. Scrubbers were never fully shut down during the furnace shutdown. The furnace was relit, and the pellet bed started up following a warm-up period for the furnace.	Y
		Shutdown	4/3/2022 11:23	4/3/2022 18:00	Scrubbers were operated in compliance with parametric limits until pellet feed to the furnace stopped and natural gas fuel combustion ceased.	Y
		Startup	4/3/2022 22:16	4/4/2022 6:51	Scrubbers were started up consistent with the SSM Plan. Scrubbers were never fully shut down during the furnace shutdown. The furnace was relit, and the pellet bed started up following a warm-up period for the furnace.	Y
		Shutdown	4/17/2022 1:02	4/17/2022 1:35	Scrubbers were operated in compliance with parametric limits until pellet feed to the furnace stopped and natural gas fuel combustion ceased.	Y
		Startup	4/30/2022 11:37	5/2/2022 8:54	Scrubbers were started up consistent with the SSM Plan. There were no exceedances of the SO ₂ emission limitation.	Y
		Shutdown	5/23/2022 3:48	5/23/2022 4:37	Scrubbers were operated in compliance with parametric limits until pellet feed to the furnace stopped and natural gas fuel combustion ceased.	Y
		Startup	6/16/2022 3:35	6/17/2022 16:06	Scrubbers were started up consistent with the SSM Plan. There were no exceedances of the SO ₂ emission limitation.	Y
CE 014	Indurating Machine Scrubber A Low Efficiency SO ₂ Scrubber	Shutdown	4/17/22 6:30	4/17/22 6:30	Scrubbers were operated in compliance with parametric limits until furnace pellet bed stopped and fuel combustion ceased.	Y
		Startup	4/29/22 14:45	4/29/22 14:45	Scrubbers were started up consistent with the SSM Plan. There were no exceedances of the SO ₂ emission limitation.	Y
		Shutdown	5/23/22 4:45	5/23/22 8:15	Scrubbers were operated in compliance with parametric limits until furnace pellet bed stopped and fuel combustion ceased.	Y
		Startup	6/15/22 9:30	6/16/22 3:30	Scrubbers were started up consistent with the SSM Plan. There were no exceedances of the SO ₂ emission limitation.	Y

Table A Records of Startups and Shutdowns (52.1235(e)(6)(v))						
ID#	Description	Startup or Shutdown	Start	End	Actions Taken to Minimize or Eliminate Emissions	Consistent with SSM Plan?
CE 015	Indurating Machine Scrubber B Low Efficiency SO ₂ Scrubber	Shutdown	4/17/22 6:30	4/17/22 6:30	Scrubbers were operated in compliance with parametric limits until furnace pellet bed stopped and fuel combustion ceased.	Y
		Startup	4/29/22 14:45	4/29/22 14:45	Scrubbers were started up consistent with the SSM Plan. There were no exceedances of the SO ₂ emission limitation.	Y
		Shutdown	5/23/22 4:45	5/23/22 8:15	Scrubbers were operated in compliance with parametric limits until furnace pellet bed stopped and fuel combustion ceased.	Y
		Startup	6/15/22 9:30	6/16/22 3:30	Scrubbers were started up consistent with the SSM Plan. There were no exceedances of the SO ₂ emission limitation.	Y
CE 016	Indurating Machine Scrubber C Low Efficiency SO ₂ Scrubber	Shutdown	4/17/22 6:30	4/17/22 6:30	Scrubbers were operated in compliance with parametric limits until furnace pellet bed stopped and fuel combustion ceased.	Y
		Startup	4/29/22 14:45	4/29/22 14:45	Scrubbers were started up consistent with the SSM Plan. There were no exceedances of the SO ₂ emission limitation.	Y
		Shutdown	5/23/22 4:45	5/23/22 8:15	Scrubbers were operated in compliance with parametric limits until furnace pellet bed stopped and fuel combustion ceased.	Y
		Startup	6/15/22 9:30	6/16/22 3:30	Scrubbers were started up consistent with the SSM Plan. There were no exceedances of the SO ₂ emission limitation.	Y
CE 017	Indurating Machine Scrubber D Low Efficiency SO ₂ Scrubber	Shutdown	4/17/22 6:30	4/17/22 6:30	Scrubbers were operated in compliance with parametric limits until furnace pellet bed stopped and fuel combustion ceased.	Y
		Startup	4/29/22 14:45	4/29/22 14:45	Scrubbers were started up consistent with the SSM Plan. There were no exceedances of the SO ₂ emission limitation.	Y
		Shutdown	5/23/22 4:45	5/23/22 8:15	Scrubbers were operated in compliance with parametric limits until furnace pellet bed stopped and fuel combustion ceased.	Y
		Startup	6/15/22 9:30	6/16/22 3:30	Scrubbers were started up consistent with the SSM Plan. There were no exceedances of the SO ₂ emission limitation.	Y
EU026 SO ₂ EU026 NO _x	Indurating Furnace CEMS: • SO ₂ CEMS • NO _x CEMS	N/A			The CEMS operated continuously while the furnace was in operation (combusting natural gas) except for the periods specified within the quarterly excess emissions and monitoring system performance reports required by 52.1235(e)(7).	N/A

Table B Records of Malfunctions (52.1235(e)(6)(v))																
			Malfunction Dates				Malfunction Category (days)									
CE / GP	CE Description	Source Operating Time (Hours)	Value During Malfunction	Start	End	Time (days)	Startup	Shutdown	Control Equipment Problem	Process Problem	Other Known Problem	Unknown Problem	SSM Procedures Followed?	Malfunction Total Time (days)	Malfunction Time (%)	Actions Taken to Minimize or Eliminate Emissions
CE 014	Indurating Machine Scrubber A	3289.75	---	---	---	---	---	---	---	---	---	---	---	0	0.0%	---
CE 015	Indurating Machine Scrubber B	3289.75	---	---	---	---	---	---	---	---	---	---	---	0	0.0%	---
CE 016	Indurating Machine Scrubber C	3289.75	---	---	---	---	---	---	---	---	---	---	---	0	0.0%	---
CE 017	Indurating Machine Scrubber D	3289.75	---	---	---	---	---	---	---	---	---	---	---	0	0.0%	---
EU026 SO ₂ EU026 NO _x	Indurating Furnace CEMS: <ul style="list-style-type: none">SO₂ CEMSNO_x CEMS	3289.75	---	---	---	---	---	---	---	---	---	---	---	---	---	The CEMS operated continuously except for the periods specified within the quarterly excess emissions and monitoring system performance reports required by 52.1235(e)(7).

Table C Deviations (52.1235(e)(6)(vi))							
Deviation Type				Description	Cause(s)	Action to Address Deviation	Action to Avoid a Reoccurrence
Excess Emissions	Continuous Operation of Pollution Control Equipment	Continuous Operation of CEMS	Maintaining Records or Submitting Reports				
There were no identified deviations from the requirements of 52.1235 within the reporting period covered by this report.							